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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,602	02/26/2004	Josef Siraky	25985	2824
20529	7590	09/09/2005		
NATH & ASSOCIATES 1030 15th STREET, NW 6TH FLOOR WASHINGTON, DC 20005			EXAMINER ELLIS, SUEZU Y	
			ART UNIT 2878	PAPER NUMBER

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.		Applicant(s)	
	10/786,602		SIRAKY, JOSEF	
	Examiner		Art Unit	
	Suezu Ellis		2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on May 5, 2004 and June 2, 2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first component and second component rotating (claim 1) and the directions they rotate relative to one another, must be shown or the features canceled from the claim. Further, how the 90° phase-shifted sine and cosine signals are generated (claim 7) must be shown or the features canceled from the claim. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

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number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

In claim 1, the specification does not seem to support the second component rotating and further fails to demonstrate how the second component rotates relative to the first component (i.e. same direction, counter clockwise, etc.).

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, claim language recites in line 2, "two components that can be rotated relative to each other". It is unclear as to how the two components are rotated relative to each other. Are both components rotating or is one component (i.e. the motor shaft) rotating with respect to the other component (i.e. motor housing)? If both components are rotating, it is unclear as to how the angle measurement is performed. Please clarify. Further, claim language recites in lines 6-8 that the sensing device is connected to rotate in unison with the second component. It is unclear as to which component the sensing device is connected to. Is the sensing device connected to the first component (i.e. motor shaft) or the second component (i.e. motor housing)? From the claim language, the sensing device could be connected to the first component and rotates in unison with the second component. If that is the set up of the sensing device, it is unclear as to how the first component is rotating in unison with the second component. Please clarify. For examining purposes, the claim language will be interpreted as the sensing device is connected to the second component and the first component is rotating with respect to the second component.

With respect to claim 6, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). The portion of the claim language that recites "preferably lies close to 180°" will not be given patentable weight since it does not define the metes and the bounds of the claim.

With respect to claims 10-13, it is unclear the difference between shaft (33) of claims 1 and 13 and the shaft stub (33) of claims 10-12. Please clarify. For examining purposes, the shaft will be deemed the same as the shaft stub.

Claims not specifically addressed are indefinite due to their dependency.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kühne (US 4,421,980).

With respect to claims 1 and 3, Kühne discloses in Fig. 1, an angular position encoder comprising a shaft (107) coupled to a first component (the component that connects a scale to the shaft) so that it rotates in unison with the first component, a materialized measure (scale – 108) comprising an angular lattice structure (108) and is

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connected to the shaft and rotates in unison with the shaft, and a sensing device (photodiode array/pda - 102) comprising a circular track of sensor elements (103) that optically senses the materialized measure. Kühne further discloses a marker element (code field - 111) that is connected to the shaft and that rotates in unison with the shaft and influences the light impinging on the sensor elements according to its angular position for at least one sensor element associated with this angular position and the sensor elements can be polled individually (col. 4, lines 22-24). Kühne discloses individual diodes are scanned sequentially by an electronic unit, thus deemed equivalent to being polled individually (col. 3, lines 13-15).

With respect to claim 2, Kühne discloses a plate (109) comprising of light emitting diodes is arranged coaxially on the shaft and is arranged on the side of the materialized measure opposite the sensing device.

With respect to claim 4, Kühne discloses the materialized measure has an angular lattice structure wherein the graduation of the materialized measure is equal to the width of one sensor element, however the marker is equal to the width of three sensor elements combined (Fig. 2; col. 3, line 67 – col. 4, line 9).

With respect to claims 10 and 11, applicant refers to the shaft stub being equivalent to shaft in claim 1. Thus, Kühne discloses the shaft stub (equivalent to shaft 107) is insertable into the first component (the element connecting the scale to the shaft) and is also inherently alignable in the first component.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kühne in view of Wlodarczyk et al. (US 4,866,269). Hereinafter, Wlodarczyk et al. will be referred to as Wlodarczyk.

With respect to claims 5 and 6, Kühne addresses all the limitations of claim 1, however fails to expressly disclose a second marker arranged offset an angle relative to the first marker. Kühne and Wlodarczyk are directed to a similar field of endeavor of angular position encoders. Wlodarczyk discloses in Fig. 2, an encoder disk comprising of a circular track with four markers (30 a, 30b, 30c, 30d) wherein the markers are offset at an angle 90°. It would have been obvious to a person of ordinary skill in the art to use the materialized measure (disk) of Kühne with the shaft in order to increase the accuracy of the measurement.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kühne in view of Weibel IV et al. (US 6,356,219). Hereinafter, Weibel IV et al. will be referred to as Weibel.

With respect to claims 7 and 8, Kühne addresses all the limitations of claim 1, however fails to expressly disclose the materialized measure generating in the sensor

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elements sine and cosine signals phase-shifted by 90°. Weibel and Kühne are directed to a similar field of endeavor of optical encoders. Weibel discloses it is well known in the art for the graduations of the encoder to have two tracks offset 90° with respect to each other as well as a marker and generates quadrature signals (sine and cosine) (col. 3, lines 31-34; col. 1, lines 27-29). It would have been obvious to a person of ordinary skill in the art to use the materialized measure of Weibel in order to increase the accuracy of the measurement.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kühne in view of Siraky (US 5,686,804).

With respect to claim 9, Kühne addresses all the limitations of claim 1, however fails to expressly disclose using a multiplex circuit for individually polling the sensor elements. Siraky and Kühne are directed to a similar problem solving field of measuring an angle of rotation. Siraky discloses it is well known in the art to include a multiplexing unit to process the signals from the sensor elements. It would have been an obvious design choice to include a multiplexing circuit in order to simplify the way the sensor elements are polled.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kühne.

With respect to claim 12, Kühne discloses all the limitations of claims 1, 10 and 11, however fails to expressly disclose the shaft is force-fitted into a hole of the first

component. It would be an obvious to force-fit the shaft into the first component in order to ensure the encoder would rotate with the shaft.

Allowable Subject Matter


Claims 13 and 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Telephone/Fax Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suez Ellis whose telephone number is 571-272-2868. The examiner can normally be reached on 8:30am-5pm (Monday-Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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